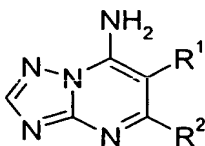


We claim:

1. A triazolopyrimidine of the formula I



I

5 in which the substituents are as defined below:

R¹ is C₂-C₁₂-alkenyl or C₂-C₁₂-alkynyl, where the carbon chains are unsubstituted or carry one to three identical or different groups R^a and/or R^b:

10 or

C₁-C₁₄-alkyl, C₁-C₁₂-alkoxy-C₁-C₁₂-alkyl, C₁-C₆-alkoxy-C₂-C₁₂-alkenyl or C₁-C₆-alkoxy-C₂-C₁₂-alkynyl, where the carbon chains carry one to three identical or different groups R^a;

15

R^a is halogen, cyano, nitro, hydroxyl, C₁-C₆-alkylthio, C₃-C₁₂-alkenyloxy, C₃-C₁₂-alkynyloxy, NR¹¹R¹², or

20

C₃-C₆-cycloalkyl which may carry one to four identical or different groups R^b;

R^b is C₁-C₄-alkyl, cyano, nitro, hydroxyl, C₁-C₆-alkoxy, C₁-C₆-alkylthio, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy and NR¹¹R¹²;

25

R¹¹, R¹² are hydrogen or C₁-C₆-alkyl;

where the carbon chains of the groups R^a for their part may be halogenated;

30

R² is C₁-C₁₂-alkyl, C₂-C₁₂-alkenyl or C₂-C₁₂-alkynyl, where the carbon chains are substituted by one to three groups R^c:

35

R^c is cyano, nitro, hydroxyl, NR¹¹R¹²; or C₃-C₆-cycloalkyl which may carry one to four identical or different groups C₁-C₄-alkyl, halogen, cyano, nitro, hydroxyl, C₁-C₆-alkoxy, C₁-C₆-alkylthio, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy or NR¹¹R¹².

2. The compound of the formula I as claimed in claim 1 in which

R^1 is C_1 - C_{14} -haloalkyl, C_1 - C_{12} -haloalkoxy- C_1 - C_{12} -alkyl, C_1 - C_{12} -alkoxy- C_1 - C_{12} -haloalkyl, C_2 - C_{12} -alkenyl, C_2 - C_{12} -haloalkenyl, C_2 - C_{12} -alkynyl or C_2 - C_{12} -haloalkynyl, where the carbon chains may carry one to three groups R^a :

5 R^a is cyano, nitro, hydroxyl, C_1 - C_6 -alkoxy, C_1 - C_6 -alkylthio, C_3 - C_{12} -alkenyloxy, C_3 - C_{12} -alkynyloxy, $NR^{11}R^{12}$, or

C_3 - C_6 -cycloalkyl which may carry one to four identical or different groups R^b ;

10

R^b is C_1 - C_4 -alkyl, cyano, nitro, hydroxyl, C_1 - C_6 -alkoxy, C_1 - C_6 -alkylthio, C_3 - C_6 -alkenyloxy, C_3 - C_6 -alkynyloxy and $NR^{11}R^{12}$

15

R^{11} , R^{12} are hydrogen or C_1 - C_6 -alkyl;

where the carbon chains of the groups R^a for their part may be halogenated.

20

3. The compound of the formula 1 as claimed in claim 1 or 2 in which

R^2 is C_1 - C_{12} -alkyl, C_2 - C_{12} -alkenyl or C_2 - C_{12} -alkynyl, where the carbon chains may be substituted by one to three groups R^c :

25

R^c is cyano, nitro, hydroxyl, $NR^{11}R^{12}$; or C_3 - C_6 -cycloalkyl which may carry one to four identical or different groups C_1 - C_4 -alkyl, halogen, cyano, nitro, hydroxyl, C_1 - C_6 -alkoxy, C_1 - C_6 -alkylthio, C_3 - C_6 -alkenyloxy, C_3 - C_6 -alkynyloxy or $NR^{11}R^{12}$.

30

4. The compound of the formula I as claimed in any of claims 1 to 3 in which

R^1 is C_1 - C_{14} -alkyl, where the carbon chains carry one to three identical or different groups cyano or halogen.

35

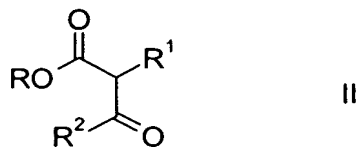
5. The compound of the formula I as claimed in any of claims 1 to 3 in which

R^1 is C_2 - C_{12} -alkenyl or C_2 - C_{12} -alkynyl, where the carbon chains are unsubstituted or carry one to three identical or different groups R^a and/or R^b .

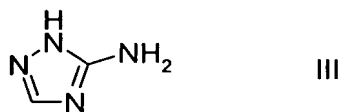
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6. The compound of the formula I as claimed in any of claims 1 to 5 in which R^1 and R^2 together do not have more than 14 carbon atoms.

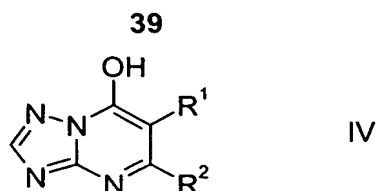
7. The compound of the formula I as claimed in any of claims 1 to 5 in which R¹ is chloromethyl, bromomethyl, dichloromethyl, trichloromethyl, fluoromethyl, di-fluoromethyl, trifluoromethyl, chlorofluoromethyl, dichlorofluoromethyl, chlorodi-fluoromethyl, 1-chloroethyl, 1-bromoethyl, 1-fluoroethyl, 2-fluoroethyl, 2,2-difluoroethyl, 2,2,2-trifluoroethyl, 2-chloro-2-fluoroethyl, 2-chloro-2,2-difluoroethyl, 2,2-dichloro-2-fluoroethyl, 2,2,2-trichloroethyl, pentafluoroethyl, 1,1,1-trifluoroprop-2-yl, 1-chloropropyl, 1-fluoropropyl, 3-chloropropyl, 3-fluoropropyl, 3,3,3-trifluoropropyl, 1-chlorobutyl, 1-fluorobutyl, 4-chlorobutyl, 4-fluorobutyl, 4,4,4-trifluorobutyl, 1-chloropentyl, 1-fluoropentyl, 5,5,5-trifluoropentyl, 5-chloropentyl, 5-fluoropentyl, 1-chlorohexyl, 1-fluorohexyl, 6-chlorohexyl, 6-fluorohexyl, 6,6,6-trifluorohexyl, 1-chloroheptyl, 1-fluoroheptyl, 7-chloroheptyl, 7-fluoroheptyl, 7,7,7-trifluoroheptyl, 1-chlorooctyl, 1-fluorooctyl, 8-fluorooctyl, 8,8,8-trifluorooctyl, 1-chlorononyl, 1-fluorononyl, 9-fluorononyl, 9,9,9-trifluorononyl, 9-chlorononyl, 1-fluorodecyl, 1-chlorodecyl, 10-fluorodecyl, 10,10,10-trifluorodecyl, 10-chlorodecyl, 1-chloroundecyl, 1-fluoroundecyl, 11-chloroundecyl, 11-fluoroundecyl, 11,11,11-trifluoroundecyl, 1-chlorododecyl, 1-fluorododecyl, 12-chlorododecyl, 12-fluorododecyl or 12,12,12-trifluorododecyl.
8. The compound of the formula I as claimed in any of claims 1 to 7 in which R² is methyl, ethyl, isopropyl, n-propyl or n-butyl.
9. 6-(3-bromopropyl)-5-ethyl-[1,2,4]triazolo[1,5-a]pyrimidin-7-ylamine;
6-(3-chloropropyl)-5-ethyl-[1,2,4]triazolo[1,5-a]pyrimidin-7-ylamine;
6-(7-amino-5-ethyl-[1,2,4]triazolo[1,5-a]pyrimidin-6-yl)-hexanenitrile;
6-(7-amino-5-propyl-[1,2,4]triazolo[1,5-a]pyrimidin-6-yl)-hexanenitrile;
5-ethyl-6-hex-5-enyl-[1,2,4]triazolo[1,5-a]pyrimidin-7-ylamine;
6-hex-5-enyl-5-methyl-[1,2,4]triazolo[1,5-a]pyrimidin-7-ylamine;
5-methyl-6-(5,6,6-trifluorohex-5-enyl)-[1,2,4]triazolo[1,5-a]pyrimidin-7-ylamine.
10. A process for preparing compounds of the formula I as claimed in any of claims 1 to 9 wherein β -ketoesters of the formula II,



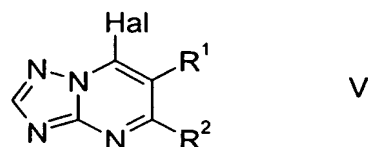
in which R is C₁-C₄-alkyl are reacted with 3-amino-1,2,4-triazole of the formula III



- to give 7-hydroxytriazolopyrimidines of the formula IV



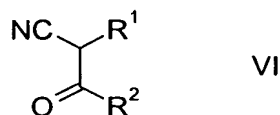
which are halogenated to give compounds of the formula V



in which Hal is chlorine or bromine and V is reacted with ammonia.

5

11. A process for preparing compounds of the formula I as claimed in any of claims 1 to 9 wherein acylcyanides of the formula VI,

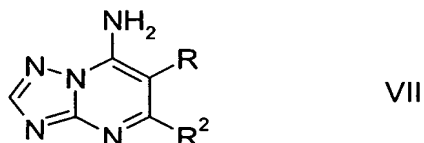


are reacted with 3-amino-1,2,4-triazole of the formula III as claimed in claim 10.

10

12. A compound of the formula IV or V as set forth in claim 10.
13. A process for preparing compounds of the formula I as claimed in claim 1 in which R¹ is halogen-substituted C₁-C₁₄-alkyl, C₁-C₁₂-alkoxy-C₁-C₁₂-alkyl, C₂-C₁₂-alkenyl or C₂-C₁₂-alkynyl, by halogenating triazolopyrimidines of the formula VII,

15



in which R is C₁-C₁₄-alkyl, C₁-C₁₂-alkoxy-C₁-C₁₂-alkyl, C₂-C₁₂-alkenyl, C₂-C₁₂-alkynyl, where the carbon chains may carry one to three groups Rᵃ as set forth in claim 1, using a halogenating agent in the presence of a free-radical initiator or an acid.

20

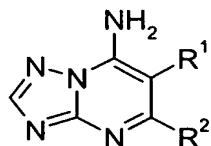
14. A fungicidal composition comprising a solid or liquid carrier and a compound of the formula I as claimed in any of claims 1 to 7.
- 25 15. Seed comprising a compound of the formula I as claimed in any of claims 1 to 9 in an amount of 1 to 1000 g per 100 kg.
16. A method for controlling phytopathogenic harmful fungi wherein the fungi or the materials, plants, the soil or seed to be protected against fungal attack are treated with an effective amount of a compound of the formula I as claimed in any
- 30 of claims 1 to 9.

5,6-Dialkyl-7-aminotriazolopyrimidines, their preparation and their use for controlling harmful fungi, and compositions comprising these compounds

Abstract

5

5,6-Dialkyl-7-aminotriazolopyrimidines of the formula I



I

in which the substituents are as defined below:

10 R¹ is alkyl, alkoxyalkyl, alkenyl or alkynyl;

R² is alkyl, alkoxyalkyl, alkenyl or alkynyl;

where R¹ and/or R² are substituted as defined in the description;

15

processes for preparing these compounds, compositions comprising them and their use for controlling phytopathogenic harmful fungi.